

## **RAW SEQUENCE LISTING**

**The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.**

Application Serial Number: 10/620,787A  
Source: 1FW16  
Date Processed by STIC: 7/19/06

# ***ENTERED***



IFW16

## RAW SEQUENCE LISTING

DATE: 07/19/2006

PATENT APPLICATION: US/10/620,787A

TIME: 08:57:20

Input Set : A:\5130000006 Sequence Listing.txt

Output Set: N:\CRF4\07192006\J620787A.raw

3 <110> APPLICANT: Simard, John  
 4 Simms, John J.  
 5 Qiu, Zhiyong  
 7 <120> TITLE OF INVENTION: Immunogenic Compositions Derived from Poxviruses and Methods  
 of  
 8 Using Same  
 10 <130> FILE REFERENCE: 51300-00006  
 12 <140> CURRENT APPLICATION NUMBER: 10/620,787A  
 13 <141> CURRENT FILING DATE: 2003-07-15  
 15 <150> PRIOR APPLICATION NUMBER: 60/396,293  
 16 <151> PRIOR FILING DATE: 2002-07-15  
 18 <160> NUMBER OF SEQ ID NOS: 33  
 20 <170> SOFTWARE: PatentIn version 3.3  
 22 <210> SEQ ID NO: 1  
 23 <211> LENGTH: 250  
 24 <212> TYPE: PRT  
 25 <213> ORGANISM: Vaccinia virus  
 27 <400> SEQUENCE: 1  
 29 Met Gly Ala Ala Ala Ser Ile Gln Thr Thr Val Asn Thr Leu Ser Glu  
 30 1 5 10 15  
 33 Arg Ile Ser Ser Lys Leu Glu Gln Glu Ala Asn Ala Ser Ala Gln Thr  
 34 20 25 30  
 37 Lys Cys Asp Ile Glu Ile Gly Asn Phe Tyr Ile Arg Gln Asn His Gly  
 38 35 40 45  
 41 Cys Asn Leu Thr Val Lys Asn Met Cys Ser Ala Asp Ala Asp Ala Gln  
 42 50 55 60  
 45 Leu Asp Ala Val Leu Ser Ala Ala Thr Glu Thr Tyr Ser Gly Leu Thr  
 46 65 70 75 80  
 49 Pro Glu Gln Lys Ala Tyr Val Pro Ala Met Phe Thr Ala Ala Leu Asn  
 50 85 90 95  
 53 Ile Gln Thr Ser Val Asn Thr Val Val Arg Asp Phe Glu Asn Tyr Val  
 54 100 105 110  
 57 Lys Gln Thr Cys Asn Ser Ser Ala Val Val Asp Asn Lys Leu Lys Ile  
 58 115 120 125  
 61 Gln Asn Val Ile Ile Asp Glu Cys Tyr Gly Ala Pro Gly Ser Pro Thr  
 62 130 135 140  
 65 Asn Leu Glu Phe Ile Asn Thr Gly Ser Ser Lys Gly Asn Cys Ala Ile  
 66 145 150 155 160  
 69 Lys Ala Leu Met Gln Leu Thr Thr Lys Ala Thr Thr Gln Ile Ala Pro  
 70 165 170 175  
 73 Lys Gln Val Ala Gly Thr Gly Val Gln Phe Tyr Met Ile Val Ile Gly  
 74 180 185 190  
 77 Val Ile Ile Leu Ala Ala Leu Phe Met Tyr Tyr Ala Lys Arg Met Leu  
 78 195 200 205

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81 Phe Thr Ser Thr Asn Asp Lys Ile Lys Leu Ile Leu Ala Asn Lys Glu
82      210                      215                      220
85 Asn Val His Trp Thr Thr Tyr Met Asp Thr Phe Phe Arg Thr Ser Pro
86 225                      230                      235                      240
89 Met Val Ile Ala Thr Thr Asp Met Gln Asn
90      245                      250
93 <210> SEQ ID NO: 2
94 <211> LENGTH: 250
95 <212> TYPE: PRT
96 <213> ORGANISM: Vaccinia virus
98 <400> SEQUENCE: 2
100 Met Gly Ala Ala Ala Ser Ile Gln Thr Thr Val Asn Thr Leu Ser Glu
101 1      5      10      15
104 Arg Ile Ser Ser Lys Leu Glu Gln Glu Ala Asn Ala Ser Ala Gln Thr
105      20      25      30
108 Lys Cys Asp Ile Glu Ile Gly Asn Phe Tyr Ile Arg Gln Asn His Gly
109      35      40      45
112 Cys Asn Leu Thr Val Lys Asn Met Cys Ser Ala Asp Ala Asp Ala Gln
113      50      55      60
116 Leu Asp Ala Val Leu Ser Ala Ala Thr Glu Thr Tyr Ser Gly Leu Thr
117 65      70      75      80
120 Pro Glu Gln Lys Ala Tyr Val Pro Ala Met Phe Thr Ala Ala Leu Asn
121      85      90      95
124 Ile Gln Thr Ser Val Asn Thr Val Val Arg Asp Phe Glu Asn Tyr Val
125      100     105     110
128 Lys Gln Thr Cys Asn Ser Ser Ala Val Val Asp Asn Lys Leu Lys Ile
129      115     120     125
132 Gln Asn Val Ile Ile Asp Glu Cys Tyr Gly Ala Pro Gly Ser Pro Thr
133      130     135     140
136 Asn Leu Glu Phe Ile Asn Thr Gly Ser Ser Lys Gly Asn Cys Ala Ile
137 145     150     155     160
140 Lys Ala Leu Met Gln Leu Thr Thr Lys Ala Thr Thr Gln Ile Ala Pro
141      165     170     175
144 Arg Gln Val Ala Gly Thr Gly Val Gln Phe Tyr Met Ile Val Ile Gly
145      180     185     190
148 Val Ile Ile Leu Ala Ala Leu Phe Met Tyr Tyr Ala Lys Arg Met Leu
149      195     200     205
152 Phe Thr Ser Thr Asn Asp Lys Ile Lys Leu Ile Leu Ala Asn Lys Glu
153      210     215     220
156 Asn Val His Trp Thr Thr Tyr Met Asp Thr Phe Phe Arg Thr Ser Pro
157 225     230     235     240
160 Met Val Ile Ala Thr Thr Asp Met Gln Asn
161      245     250
164 <210> SEQ ID NO: 3
165 <211> LENGTH: 250
166 <212> TYPE: PRT
167 <213> ORGANISM: Variola virus
169 <400> SEQUENCE: 3
171 Met Gly Ala Ala Ala Ser Ile Gln Thr Thr Val Asn Thr Leu Ser Glu

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```

172 1          5          10          15
175 Arg Ile Ser Ser Lys Leu Glu Gln Glu Ala Asn Ala Ser Ala Gln Thr
176          20          25          30
179 Lys Cys Asp Ile Glu Ile Gly Asn Phe Tyr Ile Arg Gln Asn His Gly
180          35          40          45
183 Cys Asn Leu Thr Val Lys Asn Met Cys Ser Ala Asp Ala Asp Ala Gln
184          50          55          60
187 Leu Asp Ala Val Leu Ser Ala Ala Thr Glu Thr Tyr Ser Gly Leu Thr
188 65          70          75          80
191 Pro Glu Gln Lys Ala Tyr Val Pro Ala Met Phe Thr Ala Ala Leu Asn
192          85          90          95
195 Ile Gln Thr Ser Val Asn Thr Val Val Arg Asp Phe Glu Asn Tyr Val
196          100          105          110
199 Lys Gln Thr Cys Asn Ser Ser Ala Val Val Asp Asn Lys Leu Lys Ile
200          115          120          125
203 Gln Asn Val Ile Ile Asp Glu Cys Tyr Gly Ala Pro Gly Ser Pro Thr
204          130          135          140
207 Asn Leu Glu Phe Ile Asn Thr Gly Ser Ser Lys Gly Asn Cys Ala Ile
208 145          150          155          160
211 Lys Ala Leu Met Gln Leu Thr Thr Lys Ala Thr Thr Gln Ile Ala Pro
212          165          170          175
215 Arg Gln Val Ala Gly Thr Gly Val Gln Phe Tyr Met Ile Val Ile Gly
216          180          185          190
219 Val Ile Ile Leu Ala Ala Leu Phe Met Tyr Tyr Ala Lys Arg Met Leu
220          195          200          205
223 Phe Thr Ser Thr Asn Asp Lys Ile Lys Leu Ile Leu Ala Asn Lys Glu
224          210          215          220
227 Asn Val His Trp Thr Thr Tyr Met Asp Thr Phe Phe Arg Thr Ser Pro
228 225          230          235          240
231 Met Val Ile Ala Thr Thr Asp Ile Gln Asn
232          245          250
235 <210> SEQ ID NO: 4
236 <211> LENGTH: 250
237 <212> TYPE: PRT
238 <213> ORGANISM: Variola virus
240 <400> SEQUENCE: 4
242 Met Gly Ala Ala Ala Ser Ile Gln Thr Thr Val Asn Thr Leu Ser Glu
243 1          5          10          15
246 Arg Ile Ser Ser Lys Leu Glu Gln Glu Ala Asn Ala Ser Ala Gln Thr
247          20          25          30
250 Lys Cys Asp Ile Glu Ile Gly Asn Phe Tyr Ile Arg Gln Asn His Gly
251          35          40          45
254 Cys Asn Leu Thr Val Lys Asn Met Cys Ser Ala Asp Ala Asp Ala Gln
255          50          55          60
258 Leu Asp Ala Val Leu Ser Ala Ala Thr Glu Thr Tyr Ser Gly Leu Thr
259 65          70          75          80
262 Pro Glu Gln Lys Ala Tyr Val Pro Ala Met Phe Thr Ala Ala Leu Asn
263          85          90          95
266 Ile Gln Thr Ser Val Asn Thr Val Val Arg Asp Phe Glu Asn Tyr Val

```

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```

267          100          105          110
270 Lys Gln Thr Cys Asn Ser Ser Ala Val Val Asp Asn Lys Leu Lys Ile
271          115          120          125
274 Gln Asn Val Ile Ile Asp Glu Cys Tyr Gly Ala Pro Gly Ser Pro Thr
275          130          135          140
278 Asn Leu Glu Phe Ile Asn Thr Gly Ser Ser Lys Gly Asn Cys Ala Ile
279 145          150          155          160
282 Lys Ala Leu Met Gln Leu Thr Thr Lys Ala Thr Thr Gln Ile Ala Pro
283          165          170          175
286 Arg Gln Val Ala Gly Thr Gly Val Gln Phe Tyr Met Ile Val Ile Gly
287          180          185          190
290 Val Ile Ile Leu Ala Ala Leu Phe Met Tyr Tyr Ala Lys Arg Met Leu
291          195          200          205
294 Phe Thr Ser Thr Asn Asp Lys Ile Lys Leu Ile Leu Ala Asn Lys Glu
295          210          215          220
298 Asn Val His Trp Thr Thr Tyr Met Asp Thr Phe Phe Arg Thr Ser Pro
299 225          230          235          240
302 Met Val Ile Ala Thr Thr Asp Ile Gln Asn
303          245          250
306 <210> SEQ ID NO: 5
307 <211> LENGTH: 250
308 <212> TYPE: PRT
309 <213> ORGANISM: Artificial
311 <220> FEATURE:
312 <223> OTHER INFORMATION: Consensus sequence for SEQ ID NOs. 1-4
314 <400> SEQUENCE: 5
316 Met Gly Ala Ala Ala Ser Ile Gln Thr Thr Val Asn Thr Leu Ser Glu
317 1          5          10          15
320 Arg Ile Ser Ser Lys Leu Glu Gln Glu Ala Asn Ala Ser Ala Gln Thr
321          20          25          30
324 Lys Cys Asp Ile Glu Ile Gly Asn Phe Tyr Ile Arg Gln Asn His Gly
325          35          40          45
328 Cys Asn Leu Thr Val Lys Asn Met Cys Ser Ala Asp Ala Asp Ala Gln
329          50          55          60
332 Leu Asp Ala Val Leu Ser Ala Ala Thr Glu Thr Tyr Ser Gly Leu Thr
333 65          70          75          80
336 Pro Glu Gln Lys Ala Tyr Val Pro Ala Met Phe Thr Ala Ala Leu Asn
337          85          90          95
340 Ile Gln Thr Ser Val Asn Thr Val Val Arg Asp Phe Glu Asn Tyr Val
341          100          105          110
344 Lys Gln Thr Cys Asn Ser Ser Ala Val Val Asp Asn Lys Leu Lys Ile
345          115          120          125
348 Gln Asn Val Ile Ile Asp Glu Cys Tyr Gly Ala Pro Gly Ser Pro Thr
349          130          135          140
352 Asn Leu Glu Phe Ile Asn Thr Gly Ser Ser Lys Gly Asn Cys Ala Ile
353 145          150          155          160
356 Lys Ala Leu Met Gln Leu Thr Thr Lys Ala Thr Thr Gln Ile Ala Pro
357          165          170          175
360 Arg Gln Val Ala Gly Thr Gly Val Gln Phe Tyr Met Ile Val Ile Gly

```

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```

361          180          185          190
364 Val Ile Ile Leu Ala Ala Leu Phe Met Tyr Tyr Ala Lys Arg Met Leu
365          195          200          205
368 Phe Thr Ser Thr Asn Asp Lys Ile Lys Leu Ile Leu Ala Asn Lys Glu
369          210          215          220
372 Asn Val His Trp Thr Thr Tyr Met Asp Thr Phe Phe Arg Thr Ser Pro
373 225          230          235          240
376 Met Val Ile Ala Thr Thr Asp Met Gln Asn
377          245          250
380 <210> SEQ ID NO: 6
381 <211> LENGTH: 110
382 <212> TYPE: PRT
383 <213> ORGANISM: Vaccinia virus
385 <400> SEQUENCE: 6
387 Met Asp Gly Thr Leu Phe Pro Gly Asp Asp Asp Leu Ala Ile Pro Ala
388 1          5          10          15
391 Thr Glu Phe Phe Ser Thr Lys Ala Ala Lys Lys Pro Asp Arg Lys Arg
392          20          25          30
395 Glu Gln Ile Val Lys Ala Asp Glu Asp Asp Asn Glu Glu Thr Leu Lys
396          35          40          45
399 Gln Arg Leu Thr Asn Leu Glu Lys Lys Ile Thr Asn Val Thr Thr Lys
400          50          55          60
403 Phe Glu Gln Ile Glu Lys Cys Cys Lys Arg Asn Asp Glu Val Leu Phe
404 65          70          75          80
407 Arg Leu Glu Asn His Ala Glu Thr Leu Arg Ala Ala Met Ile Ser Leu
408          85          90          95
411 Ala Lys Lys Ile Asp Val Gln Thr Gly Arg Arg Pro Tyr Glu
412          100          105          110
415 <210> SEQ ID NO: 7
416 <211> LENGTH: 110
417 <212> TYPE: PRT
418 <213> ORGANISM: Vaccinia virus
420 <400> SEQUENCE: 7
422 Met Asp Gly Thr Leu Phe Pro Gly Asp Asp Asp Leu Ala Ile Pro Ala
423 1          5          10          15
426 Thr Glu Phe Phe Ser Thr Lys Ala Asp Lys Lys Pro Glu Ala Lys Arg
427          20          25          30
430 Glu Ala Ile Val Lys Ala Asp Glu Asp Asp Asn Glu Glu Thr Leu Lys
431          35          40          45
434 Gln Arg Leu Thr Asn Leu Glu Lys Lys Ile Thr Asn Val Thr Thr Lys
435          50          55          60
438 Phe Glu Gln Ile Glu Lys Cys Cys Lys Arg Asn Asp Glu Val Leu Phe
439 65          70          75          80
442 Arg Leu Glu Asn His Ala Glu Thr Leu Arg Ala Ala Met Ile Ser Leu
443          85          90          95
446 Ala Lys Lys Ile Asp Val Gln Thr Gly Arg Arg Pro Tyr Glu
447          100          105          110
450 <210> SEQ ID NO: 8
451 <211> LENGTH: 110

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RAW SEQUENCE LISTING ERROR SUMMARY      DATE: 07/19/2006  
PATENT APPLICATION:    US/10/620,787A      TIME: 08:57:21

Input Set : A:\5130000006 Sequence Listing.txt  
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Invalid <213> Response:

Use of "Artificial" only as "<213> Organism" response is incomplete,  
per 1.823(b) of New Sequence Rules. Valid response is Artificial Sequence.

Seq#:5,10,15,20,27,32,33

**VERIFICATION SUMMARY**

DATE: 07/19/2006

PATENT APPLICATION: US/10/620,787A

TIME: 08:57:21

Input Set : A:\5130000006 Sequence Listing.txt

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